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3M INNOVATIVE PROPERTIES COMPANY
PO BOX 33427
ST. PAUL, MN 55133-3427

EXAMINER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/014,625
Filing Date: 10/22/2001
Appellant(s): STEPHEN HAWKINS ET AL.

Elizabeth Gallo
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed on 10/11/2010 appealing from the Office action mailed 02/22/2010.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

Claims 28, 31-41, 44, 45, and 47.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the

subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

WO 93/11184	Babu et al.	06-1993
US 3,970,771	Davison	07-1976
US 4,859,540	Bragole	08-1989
US 5,266,400	Yarusso et al.	11-1993
US 4,141,876	Hansen	02-1979
US 6,045,922	Janssen et al.	04-2000
US 5,846,653	Hawkins	12-1988
US 5,677,376	Groves	10-1997
US 5,037,885	Mori et al.	08-1991
US 4,476,259	Kordomenos	10-1984
US 3,979,510	Rubino	09-1976
US 4,731,273	Bonk	03-1988

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

1. **Claims 37-41, 44, 45, and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Babu et al. (WO 93/11184) in view of Davison (US 3,970,771), Bragole (US 4,859,540), Yarusso et al. (US 5,266,400), and as evidenced by Hansen (US 4,141,876).**
2. With respect to the limitation "prior to being crosslinked", the Examiner submits that said recitation is interpreted to refer to the PSA (i.e. prior to the PSA being crosslinked).
3. Regarding claim 45, Babu teaches a PSA tape and a method of making the PSA tape. The PSA tape of Babu includes a radiation curable PSA that is applied onto a support (abstract and page 17 lines 11-24). Additionally, Babu discloses that in some applications primers may be useful for improving the adhesion of the adhesive to substrates (page 17 lines 33-35 to page 18 lines 1-5).
4. According to Babu "Useful primers for the practice of the present invention include triblock copolymer of styrene-ethylene/butylene-styrene grafted with maleic anhydride (Kraton G-1901X copolymer, Shell Chemical Co.) **and** a combination of amorphous polypropylene [reads on Appellant's non-halogenated polyolefin comprising C2-C30 alpha olefin monomer] and Kraton G1901X copolymer [reads on applicant's "wherein the maleated thermoplastic elastomer is...styrene-ethylene-butene-styrene type block copolymer]." (page 17 lines 34-37 to page 18 lines 1-3). Moreover, Babu discloses that the PSA of the invention includes crosslinking agents such as aldehyde

or ketone (page 11, lines 25-35) and that the PSA can be crosslinked using actinic radiation (page 13 lines 35-40). Additionally, Babu discloses PSAs comprising alpha-olefins (abstract).

5. With respect to claim 45, it is submitted that the aforementioned disclosure of Babu meets claim limitations "A method of making tape comprising...a non-halogenated polyolefin, wherein C2-C30 alpha-olefin monomer" and step (c) "applying a pressure sensitive adhesive atop the primer, wherein the pressure sensitive adhesive is based on...wherein the second crosslinking agent...sym-traizine". Additionally, as to step (d), Babu discloses crosslinking of adhesive using radiation (pages 13-14).

6. Regarding claim 45, Babu is silent with respect to teaching the primer comprising a hydrocarbon resin having Tg of between about 0°C and about 100°C, a first crosslinking agent that is activated by actinic radiation and type of the first crosslinking agent, applying the PSA atop the primer prior to being crosslinked, and step (d) as relates to applying actinic radiation to crosslink the primer.

7. However, Davison discloses a substrate that is coated with mixed resin primer comprising a block copolymer. The primer of Davison comprises hydrogenated block copolymer and a resin that is compatible with the non-elastomeric blocks of the copolymer and, in some instances including carboxylated resin (abstract). Further, Davison's invention is related to improving the bonding between "low energy' substrate

such as polyolefins and coatings using the primer of his invention (Background of the Invention section of Davison). Moreover, Davison discloses that the end block compatible resins are coumarone-indene (identified by Cumar LX 509 see Example 1 of Davison), olefinic hydrocarbon resin etc. (see column 2 lines 39-57). The Cumar LX 509 resin as taught by Davison has Tg of about 88°C as evidenced by column 5 lines 54-58 of Hansen (US 4,141,876).

8. It is noted that the primer of Babu includes block copolymers which are used to improve the adhesion of the adhesive to substrates such as polyolefins. The secondary reference of Davison is related to improving the bonding between "low energy" substrate such as polyolefins and coatings using primer of his invention (see Background of the Invention). Further, the primer of Davison includes block copolymers and resin such as coumarone-indene.

9. Therefore, regarding claim 45, it would have been obvious to use the resin such as coumarone-indene with Tg of between 0°C and 100°C in the primer of Babu, motivated by the desire to form a primer composition that can be useful in bonding substrates of Babu to the PSA.

10. Additionally, regarding claim 45, Babu as modified by Davison is silent as to teaching providing a primer with a first crosslinking agent that may be activated by

actinic radiation and a method step (d) as relates to applying actinic radiation to crosslink the primer.

11. However, Bragole discloses a primed surface that is irradiated and an adhesive is bonded to the primer (abstract). According to Bragole "It is believed that the primer becomes engrafted to the polyolefin substrate surface and cross-links during continual exposure to irradiation...The net effect is (1) a stronger union of the primer to the polyolefin surface than is possible without irradiation...adhesives." (column 2 lines 7-20). Further, Bragole discloses that the primer may be irradiated with photosensitizers such as benzophenone, para-chlorobenzophenone in order to increase the effectiveness of the radiation applied thereto (column 10 lines 30-43), which reads on Applicant's first crosslinking agents such as ketone.

12. Thus regarding claim 45, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add the crosslinking agent as taught by Bragole and irradiation process as employed in Bragole to crosslink the primer layer, in order to increase the effectiveness of the radiation applied thereto.

13. Given that Babu modified by Davison and Bragole discloses a primer with crosslinking agent and adhesive with crosslinking agent, wherein Babu discloses that the primer and adhesive are first applied to the substrate and then subject to radiation to cure, it is clear that the references disclose the requirement of the application of the

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adhesive atop the primer prior to being crosslinked (page 17 line 33-page 18, line 5 and page 33 lines 9-22 of Babu).

14. Alternatively, with respect to claim 45, Babu as modified by Davison and Bragole is silent as to explicitly teaching application of adhesive atop the primer ***prior to being crosslinked***.

15. However, Yarusso discloses a PSA tape comprising electron beam crosslinkable PSA (abstract). Additionally, at column 3 lines 5-10, Yarusso discloses application of a primer to a backing prior to applying an adhesive to the backing. Moreover, Yarusso discloses that the coated tapes are exposed to electron beam radiation from the adhesive said to suitably crosslink the adhesive (column 3 lines 10-15). This disclosure of Yarusso is interpreted to meet Appellant's claim requirement of application of the adhesive atop the primer prior to being crosslinked.

16. It is noted that Babu discloses of providing primer in order to improve the adhesion of the adhesive to substrates (page 17 lines 30-35). Additionally, Babu's PSAs are crosslinkable (page 13 lines 35-42). Yarusso as set forth above describes a PSA tape in which one can coat the adhesive on a primer and then crosslink the adhesive.

17. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to apply the PSA of Babu atop the primer prior to being

crosslinked, motivated by the desire to form a PSA tape of Babu since Babu desires formation of a PSA tape and Yarusso provides necessary details to practice the invention of Babu.

18. With respect to claims 37-39, Babu discloses that the PSA is polyolefin based, wherein the PSA is poly alpha olefin comprising six to ten carbon atoms (see abstract, page 4 lines 25-37, page 7 lines 1-17 and lines 30-35, and page 9 lines 15-20).

19. Regarding claim 40, Babu discloses PSA with Tg in the range of -70 to 0°C (page 5 lines 12-20 of Babu).

20. As to claim 41, at page 14 lines 35-37 to page 15 lines 1-3, Babu discloses addition of tackifier resins to the adhesive composition.

21. With respect to claim 44, page 17 lines 25-30 of Babu disclose substrate such as polyethylene and polypropylene.

22. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Babu et al. (WO 93/11184) in view of Davison (US 3,970,771), Bragole (US 4,859,540), Yarusso et al. (US 5,266,400), and as evidenced by Hansen (US 4,141,876) as applied to claim 45 above, and further in view of Janssen et al. (US 6,045,922).

23. Babu as modified by Davison, Bragole, and Yarusso is silent as to teaching polyhexene or polyoctene.

24. However, Janssen is relied upon to show that it is known in the adhesive art to use polyoctene. Specifically, Janssen discloses a PSA comprising poly alpha olefin such as polyoctene (abstract and column 3 lines 5-10). Further, Janesen discloses that these polyolefins provide good adhesion, can easily and cleanly be removed if no longer needed, and can be recycled (column 2 lines 34-36).

25. The Examiner submits that, it appears that there is no criticality associated with Appellant's selection of either polyhexene or polyoctene. Additionally, the primer layer of Babu includes polyolefin. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the polyoctene as disclosed by Janssen, since such material provides good adhesion, can easily and cleanly be removed if no longer needed, and can be recycled.

26. **Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Babu et al. (WO 93/11184) in view of Davison (US 3,970,771), Bragole (US 4,859,540), Yarusso et al. (US 5,266,400), and as evidenced by Hansen (US 4,141,876) as applied to claim 45 above, and further in view of Hawkins (US 5,846,653).**

27. Babu as modified by Davison, Bragole, Yarusso is silent as to teaching claim 31.

28. However, Hawkins is relied upon to show that in adhesive art, it is known to utilize crosslinking agent such as that of claimed by Appellant. Specifically, Hawkins discloses a PSA tape comprising a primer layer and a PSA (abstract). Additionally, at

column 4 lines 38-39, Hawkins discloses crosslinking agent such as that of claimed by Appellant. Additionally, the Examiner submits that it appears that there is no criticality associated with selection of a particular crosslinking agent such as that of claimed by Appellant in the present invention. As such, it would have been obvious to select a known crosslinking agent such as that of taught by Hawkins and add it to the primer, motivated by the desire to effectively crosslink the primer.

29. Claims 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Babu et al. (WO 93/11184) in view of Davison (US 3,970,771) and Bragole (US 4,859,540) Yarusso et al. (US 5,266,400), and as evidenced by Hansen (US 4,141,876) as applied to claim 45 above, and further in view of Mori et al. (US 5,037,885).

30. Babu as modified by Davison, Bragole and Yarusso is silent as to teaching the primer further comprising epoxy resin as claimed in claims 32 and 33.

31. However, Mori discloses a two part primer composition comprising at least one block copolymer such as SEBS that is copolymerized with maleic anhydride and a curing component comprising an epoxy resin having two or more functional groups, which has excellent heat-resistance adhesion and durable adhesion and it is suitable for adhering between polyolefinic substances or between polyolefinic substance and other organic substance (abstract). The epoxy resin as taught at column 2 lines 34-55 of Mori reads on the epoxy resin as claimed in claims 32 and 33.

32. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add the epoxy resin in the primer of Babu motivated by the desire to improve the adhesion of the primer to the polyolefin substrates.

33. **Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Babu et al. (WO 93/11184) in view of Davison (US 3,970,771) and Bragole (US 4,859,540) Yarusso et al. (US 5,266,400), and as evidenced by Hansen (US 4,141,876) as applied to claim 45 above, and further in view of Bonk et al. (US 4,731,273).**

34. Babu as modified by Davison, Bragole and Yarusso is silent as to teaching the aforementioned claim 34.

35. However, Bonk discloses a heat-recoverable closure (adhesive tape) having a layer of cross-linked PSA (abstract and column 5 lines 55-65). Further, at column 8 lines 5-10, Bonk discloses use of primer for superior bonding of PSA to the low surface energy heat-recoverable sheet (i.e. substrate). At column 8 lines 37-38, Bonk discloses primer composition comprising multi-functional acrylate such as trimethylpropane triacrylate.

36. It would have been obvious to one having ordinary skill in the art at the time the invention was made to select the primer comprising multi-functional acrylate, since it has been held that selection of a known material based on its suitability for its intended use establishes a *prima facie* case of obviousness. Alternatively, it would have been

obvious to one having ordinary skill in the art at the time the invention was made to select the primer comprising multi-functional acrylate to achieve consistently superior bonding of the PSA to the substrate (see column 8 lines 5-10 of Bonk).

37. Claims 35 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Babu et al. (WO 93/11184) in view of Davison (US 3,970,771) and Bragole (US 4,859,540) Yarusso et al. (US 5,266,400), and as evidenced by Hansen (US 4,141,876) as applied to claim 45 above, and further in view of Kodomenos (US 4,476,259) as evidenced by Rubino (US 3,979,510).

38. Babu as modified by Davison, Bragole and Yarusso is silent as to teaching the aforementioned claims 35 and 36.

39. However, Kodomenos discloses coating composition that can be used as a primer (abstract). Additionally, at column 15 line 10, Kodomenos discloses that the primer of his/her invention includes additive such as Cab-O-Sil M-5 (trademark), which is fumed amorphous silica (equated to Appellant's filler) as evidenced by US Patent 3,979,510 to Rubino (see footnote (1) under Table 1).

40. It would have been obvious to one having ordinary skill in the art at the time the invention was made to select the primer comprising fumed amorphous silica, since it has been held that selection of a known material based on its suitability for its intended use establishes a *prima facie* case of obviousness. Alternatively, It would have been obvious to one having ordinary skill in the art at the time the invention was made to add

the fumed amorphous silica as an anti-settling or anti-sagging agent to control the properties of the primer (column 15 lines 1-11).

41. **Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Babu et al. (WO 93/11184) in view of Davison (US 3,970,771) and Bragole (US 4,859,540) Yarusso et al. (US 5,266,400), and as evidenced by Hansen (US 4,141,876) as applied to claim 45 above, and further in view of Groves (US 5,677,376).**

42. Babu modified by Davison, Bragole, and Yarusso is silent as to teaching of the aforementioned claim 36.

43. However, Groves discloses a polymer blend comprising a block copolymer and (b) a polymer comprising a polymerization reaction product of two or more mono-ethylenically unsaturated monomers in which at least one of the monomers is acrylic or methacrylic ester...at least one of the monomers is a nitrogen-containing monomer (see abstract). The polymer blends of Groves are useful as adhesives, primers, ink etc. (column 1 lines 10-22). Additionally blends of Groves include filler such as silica (column 4 lines 35-36).

44. It would have been obvious to one having ordinary skill in the art at the time the invention was made to select the primer comprising filler, since it has been held that selection of a known material based on its suitability for its intended use establishes a *prima facie* case of obviousness.

(10) Response to Argument

Appellant makes following arguments with respect to independent claim 45.

ARGUMENT A

45. Appellant disagrees with the Examiner's interpretation of claim 45 language of "applying a pressure sensitive adhesive atop the primer prior to being crosslinked" as being referring to prior to the PSA being crosslinked (see page 2, paragraph 4 of Final Office action mailed on 02/22/10). Appellant argues "Claim 45, part (c), recites the limitation "prior to being crosslinked", and the Examiner interprets this to mean "the PSA prior to being crosslinked." We respectfully disagree with this interpretation for at least the following reasons...We also disagree with the interpretation of step (c) in view of common sense to one of ordinary skill: it makes no sense that a PSA be applied atop anything after it is crosslinked because crosslinking sets the adhesive, providing adequate resistance..." (see pages 3-4 of the brief).

46. The Examiner respectfully submits following:

47. As to Appellant's statement that "We also disagree with the interpretation of step (c) in view of common sense to one of ordinary skill: it makes no sense that a PSA be applied atop anything after it is crosslinked because crosslinking sets the adhesive, providing adequate resistance to flow..." the Examiner notes that Examiner's

interpretation of the aforementioned claim language (i.e. PSA is applied atop the primer prior to being crosslinked) is ***precisely in line with Appellant's statement***, given that the Examiner is interpreting that the PSA is applied a top the primer layer ***before the PSA is crosslinked (see page 2, section 4 of the Final Office action mailed on 02/22/2010)***. Additionally, as to Appellant's arguments referring to the specification (e.g. Examples 1-6, specifically Example 2), it is submitted that the features upon which Appellant relies (i.e., Examples 1-6) are not recited in the rejected claim(s). Further, the Examiner notes that contrary to Appellant's assertion that crosslinking also occurs between the layers (see page 4 of the brief), the Examiner notes that the presently claimed invention ***does not require that crosslinking occurs between the layers***. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir.1993). Accordingly, Appellant's arguments are not found persuasive.

ARGUMENT B

48. On pages 4-5 of the brief, Appellant argues "Babu does not disclose all of the limitations of claim 45, i.e., a crosslinkable PSA layer is coated on a crosslinkable primer layer before curing of either or both layers". In response, the Examiner respectfully submits following:

49. Appellant's arguments are not commensurate in scope with the basis of the rejection. Specifically, the Examiner submits that Babu's reference is relied upon to show that Babu recognizes use of crosslinkable PSA (see page 13, lines 35-40 of Babu). Babu, further discloses crosslinking of adhesive using radiation (see pages 13-14). Additionally, Babu discloses that one can use a primer layer for improving the adhesion of the adhesive to substrates (see page 17, lines 33-35 to page 18, lines 1-5). The Examiner notes Yarusso et al. (US 5,266,400) as set forth on pages 6-7, sections 17-19 of Final Office action mailed on 02/22/10 is relied upon to render obvious method step of application of *PSA atop the primer prior to being crosslinked*. Further, the Examiner notes for the record that Appellant (see first full paragraph on page 4 of the brief) recognizes that it is a **common sense knowledge** in the art that one would not apply PSA atop anything after the PSA is being crosslinked, because crosslinking sets the adhesive, and flow is required (i.e. uncrosslinked adhesive) for coating. Thus, one can view this recognition as it is common sense to apply a PSA atop anything prior to the PSA being crosslinked. Further, as to Appellant's arguments that Babu does not disclose all of the limitations of claim 45; the Examiner respectfully reminds Appellant that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir.1986).

ARGUMENT C

50. Appellant argues "Regarding paragraph 17 on page 6 of the office action, it is said that Yarusso discloses a PSA tape in which a primer on a backing is applied prior to an adhesive on the backing. Referring to column 3 lines 10-15 of Yarusso, it is said that coated tapes are exposed to electron beam radiation from the adhesive suitably to crosslink the adhesive. These disclosure by Yarusso have been interpreted to meet the claim limitation of claim 45, the requirement that an adhesive is applied before a crosslinked primer layer is crosslinked. We respectfully disagree with the interpretation of Yarusso et al. Column 3, lines 10-15 states: "the coated tapes are exposed to electron beam radiation from the adhesive side to suitably crosslink the elastomer in the adhesive..." with no mention of crosslinking a primer layer" (page 5 of the brief).

51. As to Appellant's assertion "These disclosures by Yarusso have been interpreted to meet the limitation of claim 45, the requirement that an adhesive is applied before a crosslinkable primer layer is crosslinked.", the Examiner respectfully notes that this is a mischaracterization of the Examiner's interpretation of Yarusso. Specifically, Yarusso reference is relied upon to render obvious claim 45 limitation "applying a pressure sensitive adhesive atop the primer prior to being crosslinked" (i.e. PSA is not crosslinked when applied onto the primer). This is not same as "adhesive is applied before a crosslinkable primer is crosslinked" given that claim 45 does not require that the adhesive is applied atop primer before the crosslinkable primer layer is crosslinked.

52. As to Appellant's argument that there is no mention of crosslinking of the primer in Yarusso reference, the Examiner submits that Yarusso is not relied upon to render obvious this limitation; instead Bragole (US 4,859,540) is relied upon to render obvious this limitation. While Yarusso do not disclose all the features of the present claimed invention, Yarusso is used as teaching reference, and therefore, it is not necessary for this secondary reference to contain all the features of the presently claimed invention,. Rather this reference teaches a certain concept, namely claim 45 limitation "applying a pressure sensitive adhesive atop the primer prior to being crosslinked". Accordingly, Appellant's arguments are not found persuasive.

ARGUMENT D

53. Appellant argues "Regarding paragraph 19 on page 7 of the office action, it is said that it would have been obvious to one of ordinary skill at the time the invention was made to apply a PSA of Babu atop a primer prior to being crosslinked, motivated by the desire to form a PSA tape of Babu...We respectfully submit that evidence supporting this conclusion has not been provided." (page 6 of the brief).

54. The Examiner respectfully disagrees. The evidence supporting the Examiner's conclusion of obviousness is clearly set forth on page 6, sections 17-18 of Final Office

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action mailed on 02/22/2010 which is incorporated here by reference. Accordingly, Appellant's arguments are not found persuasive.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Anish Desai/

Examiner, Art Unit 1788

Conferees:

/Callie E. Shosho/

Supervisory Patent Examiner, Art Unit 1787

/Christopher A. Fiorilla/

Chris Fiorilla

Supervisory Patent Examiner, Art Unit 1700